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A Case of Nephrorraphy

FOR

Movable Kidney:

COMPLETE RELIEF OF SYMPTOMS.
REMARKS UPON THE SUBJECT
OF MOVABLE KIDNEY.

✓
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presented by the author

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A CASE OF NEPHRORRAPHY FOR MOVABLE KIDNEY; COMPLETE RELIEF OF SYMPTOMS. REMARKS UPON THE SUBJECT OF MOVABLE KIDNEY.¹

BY MAURICE H. RICHARDSON, M.D.

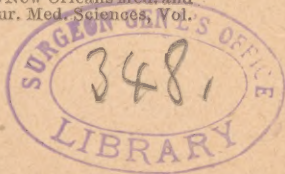
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A GREAT deal of attention has been paid to this subject during the last ten years. Before 1878 much had been written, but little had been done to relieve the symptoms caused by movable kidney beyond the adjustment of various pads and appliances to keep the organ in its proper position.

Dr. Grenville Dowell² in 1879 published a case in which he passed a seton through a movable tumor of kidney and out of abdominal wall. There was some hæmaturia. The seton remained in place three months, and gave some relief. At the end of that time the tape broke and came away. The seton caused persistent and offensive discharge. Later Dowell introduced the seton again without giving as great relief as before. The patient finally went crazy and was taken to an asylum. Dr. Smyth removed the kidney, which was found to have a scar two and a half inches long upon it from the cutting out of the seton. The patient recovered.

¹ Read before the Suffolk District Medical Society, Surgical Section, April 4, 1888.

² London Med. Record, 1879, p. 445, from the New Orleans Med. and Surg. Journal for August, 1879. Also, Am. Jour. Med. Sciences, Vol. xc, p. 84.



In 1881, Hahn³ published his method of fixing a movable kidney by lumbar incision. Of this operation the *London Medical Record* said (1882, p. 57):

"Considering that the extirpation of the kidney is an exceedingly serious operation, and that, moreover, by the removal of one kidney an increased function is thrown on the other possibly defective kidney, the surgeon will welcome the new method recommended by Hahn. He has operated twice already, completely relieving the patient in one case, and greatly alleviating the other.

"Patient is put on the left side. Long cut from the ribs to the pelvis on the outer border of the *erector spinæ*. Catgut sutures, etc. He says that in both cases the kidney became movable again after a time, and he recommended that the fatty capsule be opened and separated from the kidney, and stitched to the wound, and the kidney fixed low down."

Since the publication of this article, the operation of fixation, called by Hahn "nephrorraphy," has been done a considerable number of times by various surgeons. Some are opposed to this operation because it is not, as yet, sufficiently tested, and prefer the more dangerous operation of nephrectomy, but it seems more conservative to follow the opinion expressed by Wagner in his review of an article by Linder in the *Centralblatt für Chirurgie* for 1888, that "while it will take years to estimate the value of this operation, yet on the other hand a series of very good and lasting results have been gained by the harmless nephrorraphy so that we can never agree to extirpation of a healthy movable kidney till nephrorraphy has been tried."

In 1879, Keppler⁴ called attention to the fact that

³ *Centralblatt für Chirurgie*, 1881, No. 29.

⁴ *Archiv. für Klin. Chir.*, xxiii, 520 to 560.

movable kidney without any other complication (such as twisting on its axis, etc.) can have great effect on ability to work, can disturb the functions of the organism, and give cause to constantly developing disturbances of nutrition, so that on this account simply an operation is justifiable. He reported eleven cases, all of the right kidney, five men and six women, in whom the symptoms were digestive disturbances, chronic constipation, neuralgia, etc., and upon two of whom Martin performed nephrectomy, with complete recovery. Previous to this time this condition of the kidney was treated entirely by appliances to keep it in position. The first of these two cases of nephrectomy was in a woman forty-nine years of age, who had had the symptoms eight years. The kidney was removed by incision in the *linea alba*. She made a good recovery without fever. The second case was a patient thirty years of age. Recovery as before, with only slight rise of temperature. Dr. Carl Lauerstein⁵ reported a successful case (since dead) of removal of a healthy movable kidney by Martin.

Four later cases reported by Martin.⁶ The first died from inanition, the second from sepsis, the third in six weeks from chronic peritonitis, and the fourth made a complete recovery.

The number of operations in this line has diminished of late years, thanks to Landau, who showed in his monograph that a movable kidney was not in itself dangerous to life, and that there was no case cited in literature of death due to movable kidney. Especially have Billroth and Czerny upheld the position that the indication of nephrectomy on movable kidney should be limited as much as possible, and that it will be the work of the future to fix the offending

⁵ Archiv. f. Klin. Chir., xxvi, 2, p. 513, 1881.

⁶ Berlin. Klin. Wochenschr., xix, 1882, p. 10.

movable kidney by surgical means, and not to destroy an organ whose function is normal.⁷

Gross has collected seventeen cases of nephrorraphy, with death in one case, relapse in four, and partial success in three. Performed by Köster, Esmaich, Launstein, Schede, Kümmell, and others. In most cases the trouble was lessened or disappeared entirely. Brodeur gives the following figures of kidney operations: 327 operations, 212 women, 94 men, 15 children, and 6 not given. Of these, 235 were nephrectomies, 125 by lumbar incision, with 78 recoveries 62 4-10 %, 110 by abdominal incision, 55 recoveries, 50 %, 43 nephrotomies, 34 by lumbar incision, 23 recoveries, 67 6-10 %, 9 by abdominal incision, 7 recoveries, 77 %.⁷ (Gross, 1835, 93 cases, 71 recoveries.)

10 nephrorraphies, all lumbar, with one death. (Gross 17 cases, one death.)⁷

The treatment recommended for movable kidney by different surgeons ranges from operations of considerable severity where the mortality is high, as above, to the application of contrivances for holding the kidney in place. In selecting the operation suitable for a given case, we must first carefully consider the symptoms present, the possible danger to life if they are left unrelieved, and how far we are justified in subjecting the patient to the risk of a dangerous operation to relieve symptoms of pain and discomfort.

It is certainly very seldom that a movable kidney endangers life; some writers deny that this condition is ever a dangerous one. A very large number of cases of movable kidney have been recorded by various writers up to the present time. A great many different causes are given for this condition of the kidney. Prominent among these causes is the absorption of the perinephritic fat. Yet it is as common for men

⁷ Schmidt's Jahrbuch, 1887, p. 283.

to lose fat as for women, while they suffer much less from the affection. Many claim that women who have borne children are especially liable to dislocation of the kidney, but Linder,⁸ on the contrary, has observed a number of his cases in nulliparæ, where there could be no question of any laxity of the abdominal wall. He considers the condition a congenital one.

Laudau⁹ in his monograph on wandering kidney, gives as the most important and prominent cause the disappearance of fat from the fat-capsule, looseness of peritoneum, where the fat which has been present in large quantity is suddenly used up, as it is in severe, acute affections. An important rôle in women is played by laxity of abdominal wall, especially its frequent consequence, a pendulous belly. The intestines exert a dragging influence. He shows that affections of the genital organs cause movable kidney, as by causing hydro-nephrosis; also, it may be caused by pressure of the pregnant uterus on the ureter, by tumors, etc. Other causes are trauma, constant and severe coughing, labor, lifting of heavy burdens, straining at stool. All these exert a loosening influence upon the capsule. He can find no cause for movable kidney in corsets or lacing. Cause of the mobility of right kidney rather than the left is due to unequal means of fastening the two kidneys. In 178 cases 151 were right, 13 left and 14 double.¹⁰

Ellinger¹¹ shows that in many women who have been treated gynæcologically in vain, the cause of their trouble lay in a movable kidney, and cites four cases of his own where this was so. He did not consider this a sufficient cause to demand extirpation, in spite

⁸ Loc. cit.

⁹ Die Wanderniere der Frauen, Berlin, 1881.

¹⁰ Review of Landau's article by Deahna, in Schmidt's Jahrbuch, 1882, Vol. 196, Page 161.

¹¹ Wien. Med. Wochenschr., xxxi, 1315, 1317.

of many favorable experiences of Martin with nephrectomy, and held that a bandage is indicated. Landau cites 314 cases, 273 women and 41 men. A great many symptoms are described resulting from movable kidney. Landau speaks of laceration and compression of nerve-roots, bloodvessels, and functional disturbances; he considers symptoms of the strangulation of the kidney important, and finds the cause of local disturbances due to interference of local circulation in the movable kidney, caused by torsion of the kidney vessels as shown by experiments on animals.

Stiller, in a synopsis of a paper by Dr. Muller,¹² quotes "Many cases of dilatation of the stomach and of dyspepsia, were observed in connection with movable right kidney, which was evidently the cause of them, as no other could be found. The cases were observed mostly in young girls who laced tightly and performed severe work."

Bartels gives the following explanation: "The kidney is pushed forward and inwards, pressing on the pars descendens duodeni, which cannot move owing to lack of mesentery, consequently easy emptying of the stomach is hindered, the muscular layer is strained and finally becomes lax. The stomach becomes dilated, and severe chronic gastritis is set up." The writer, from observations of two cases, thinks that the sphincter pylori must be dilated, and also that part of the duodenum between the stomach and the place where the kidney presses.

Linder¹³ speaks at length of the subjective symptoms of movable kidney, some of which are almost pathognomonic signs, (contrary to Landau). Vomiting, loss of appetite, fœtor ex ore, etc., and intestinal troubles, especially after constipation. Fœtor ex ore,

¹² Wien. Med. Wochenschr., 1879, xxix, 73-76, 108-110.

¹³ Loc. cit.

the most diagnostic sign: "several cases diagnosed from this alone," yet no cause for odor given, unfortunately. The climax is reached when the writer asserts that the greatest part of stomach disturbances and a very great part of the habitual constipation of women of young and middle age, is due to mobility of the right kidney.¹⁴

Prognosis. In an uncomplicated case of movable kidney it is probably true that there is no danger to life. Linder denies, as does Landau, that any "direct, acute danger to life is imminent." Leaving out of consideration those cases of movable kidney where there is a hydro-nephrosis, or other conditions where the opinion is unanimous that either nephrectomy or nephrotomy is imperative, we are brought to the question of selecting in a given case that method of treatment which promises the greatest relief to the patient with the least risk to life. Many authorities assert that in the most, if not all cases, nothing is necessary beyond a suitable pad, to make the life of the patient one of tolerable comfort. Linder recommends first a bandage. Landau maintains that in fresh cases, horizontal position long maintained, will effect a cure. He says it is impossible to restore a kidney to its original position and sew it there. He finds the best thing to do is to immobilize the kidney, and that this is best accomplished by the modern long corset, which covers the whole abdomen and supports it. Ellinger, after many unfavorable attempts, had a bandage made which fitted his case.

Niehans¹⁵ favors the bandage, and proposes one used in a case of his own, with immediate and beneficial effect. Various other writers report cases where the application of a bandage has been followed by complete relief from symptoms.

¹⁴ Review in Centralblatt f. Chir., 1888.

¹⁵ Centralblatt f. Chirurgie, 1888, 12.

Hahn¹⁶ in his original article, reviews cases of nephrectomy for various causes and speaks of its dangers. It is justifiable only when the life and happiness of the patient are threatened and the disease can be removed in no other way. He then proposed a new operation "Die Operative Fixation der Beweglichen Niere." He had two patients, one probably with stone in well kidney, and in the other both kidneys were movable. Extirpation was not to be thought of. Lumbar incision along the sacro-lumbar muscles from the twelfth rib to the crest of ilium, etc. The kidney still in its fatty capsule was then drawn forcibly back into the wound and sewed to it by six or eight catgut sutures. Then the whole wound was stuffed with carbolic gauze. The first bandage was changed the fifteenth day, the wounds were closed in about four weeks, and the kidneys lay immovable and firm in the sewed condition, as immediately after the operation. In the first case, the troubles disappeared after the operation. In the second case, the troubles were diminished, but not entirely removed. Later, the kidneys became somewhat movable owing to standing up and moving about. The adhesion did not seem to be great enough to bear permanently the weight of the kidney when standing. It seems advisable in order to gain greater security, to open the fat capsule on the convex edge of the kidney, remove it from the posterior surface, and sew this loosened part into the wound. In this way a firmer adhesion would be secured. An indication to extirpation of a movable kidney, Hahn sees only when it is diseased, which of itself demands removal. Hahn performs this operation, which he considers perfectly harmless, only when great disturbance caused by the movable kidney

¹⁶ Centralblatt Chir., No. 29, 1881.

cannot be gotten rid of by the ordinary means.¹⁷ He considers that the extirpation of a healthy kidney is justifiable in the present state of the question, only when fixation is without success.

In the discussion of Hahn's paper before the German Congress, Landau maintained that the sewing of the dislocated kidney is as ineffective as it is dangerous, as in this way the gland is not fixed in its normal condition. The vessels and ureter suffer from the faulty arrangement, and if pregnancy should take place, the latter might be easily compressed, and hydro-nephrosis might result in consequence. In double, especially congenital movable kidneys, no attempt at operation should be made. If the dislocation were due to trauma one should give, beside the application of a bandage, a fat-forming diet.

Küster and Esmarch have each fixed a movable kidney once after Hahn's method. In both cases, the disturbances of the patient were diminished, but did not disappear entirely. A third report gave the same result.

SYNOPSIS OF OTHER CASES.

Bassini.¹⁸ Woman twenty-seven years of age, movable kidney right side, cause unknown. Hahn's operation, four stitches, wound healed ninth day, discharged on twentieth day; cessation of disturbance.

Robert F. Weir.¹⁹ Hahn's operation, patient crushed between two wagons six years before; since then had suffered disturbances of extraordinary severity; two months after the operation the patient had evidently recovered, and the pains had decidedly decreased.

Ceccherelli.²⁰ Woman twenty-eight, left movable

¹⁷ *Centralblatt f. Chirurgie*, 9, 1882; Bericht über den xi, Deutschen, Chir. Congress.

¹⁸ *Centralblatt für Chir.*, 1883, 4, p. 63.

¹⁹ *N. Y. Medical Record*, 1883, Nov. 24th.

²⁰ *Centralblatt für Chir.*, 44, p. 743, 1884.

kidney; severe disturbances for years; to make the kidney more secure, passed the stitches round the twelfth rib. In spite of perfect asepsis the patient died in forty-five hours after the operation. This is the only fatal case.

De Paoli.²¹ Woman thirty years of age; right sided lumbar pains with increasing digestive disturbances; bed position unendurable in any way. Standing was endurable. Walking soon followed by pain and vomiting. Abdomen pendulous; dilatation of stomach; movable kidney on right side, easily replaced but causes pain. Nephrorraphy performed; twelfth rib cut through to gain room; kidney fixed with numerous stitches; discharged at the end of seven weeks cured completely of disturbances.

Agnew.²² Man, thirty-two years old. Seven years before while exerting himself greatly, sudden pain in right lumbar region; constant pain thereafter; right movable kidney. After many unsuccessful attempts to retain kidney in normal position by mechanical means operation decided on; lumbar cut. Kidney drawn into abdominal walls. Catgut sutures through capsule; drainage; antiseptic bandage; healing in six weeks; in one month return of movable kidney. Some months later kidney extirpated from lumbar region. Recovery in four weeks.

In the discussion of this case, Gross remarked that in 17 cases of sewing of the dislocated kidney in its original position one was fatal, three were only partially successful and four returned. In spite of this he would always recommend the less dangerous operation before deciding on extirpation. For the latter would recommend the lumbar cut with a mortality of 33% to the abdominal with mortality of 41%.

²¹ Centralblatt Chir., 51, p. 910, 1885.

²² Phila. Med. Times, June 13, 1885.

Centralblatt f. Chir., 1835, No. 51, p. 911.

Svensson.²³ Constant pain ; incapable of the lightest work ; insisted on operation. Usual lumbar cut ; fourteen silk stitches through substance of kidney. Stitches remained in and wound closed without disturbance. Complete disappearance of the trouble without return. Kidney has remained firm, fixed in its position.

In spite of less favorable reports elsewhere about the operation, the writer justly considers his case one of interest, and sees the cause of failure in the employment of catgut and avoidance of the kidney parenchyma in putting in the stitches.

Lloyd.²⁴ Fixed a movable kidney permanently by the lumbar cut, stripping the capsule back for one-fourth inch, and fastening the freshened part in the wound by very deep suture.

Newman (Glasgow).²⁵ Capsule cut into and sewed into wound. Two stitches passing into the substance of the wound.

Warfvinge.²⁶ Right side ; recovery ; cut parallel to the vertebral column ; kidney fastened to the muscles and fascia surrounding the operation-wound by a silk thread passing through the kidney.

Smith, J. G.²⁷ Woman, thirty-nine ; tumor diagnosed as movable kidney or ovarian tumor. Abdominal incision, found movable kidney. Tried to stitch it subcutaneously, but surface of kidney tore, so scratched it several times with needle and left it *in situ*. The tumor has remained in place, but the patient does not seem much benefited.

Dunning, L. H.²⁸ Woman, forty-four years ; lum-

²³ Centralblatt für Chir., 1886, No. 47, 824.

²⁴ Practitioner, September, 1885. Also, Centralblatt f. Chir., No. 3, 1888.

²⁵ Brit. Med. Journal, April 28, 1883, p. 831.

²⁶ Schmidt's Jahrbuch., 205, 1885, p. 108.

²⁷ London Lancet, 1884, ii, 10.

²⁸ J. Am. M. Ass., Chicago, 1886, iv, 199-201.

bar incision: four stitches along each border of the incision, passing through renal capsule and perirenal adipose tissue. Result: kidney movable about one inch laterally; symptoms much relieved; would advise silk for at least half of the stitches.

Other cases are reported by various surgeons (see Bibliography). Slight modifications of Hahn's method have been recommended.

Lucas²⁹ recommends for movable kidney a simple incision to the kidney by a lumbar cut, a perfectly harmless operation. The following cicatricial process will pretty surely lead to fixity of the kidney. If not sufficient, then perform Hahn's nephrorraphy of the kidney.

The following case first came to me in the spring of 1887. The patient was very anxious to have an operation, and urged it so strongly that it was with difficulty that she was persuaded to try, first, some palliative measures for her relief. I made a careful study of the case, and had various pads made and applied, all of which she faithfully tried without the slightest benefit. Finally, I decided to perform Hahn's operation, after a consultation, at which the views already presented were urged for and against by the physicians and surgeons present, some favoring further employment of mechanics, probably under-rating the woman's suffering, and others advocating an operation for fixation. No one thought nephrectomy justifiable as a first measure.

S. E. C., aged thirty-six, married. Entered the Massachusetts General Hospital, September 19, 1887. Always strong and healthy woman. No history of previous illness. About eighteen months ago, after working, began to have pain in right lumbar region, which she attributed to a strain. Very soon after she

²⁹ Brit. Med. Journal, September 29, 1883, p. 611.

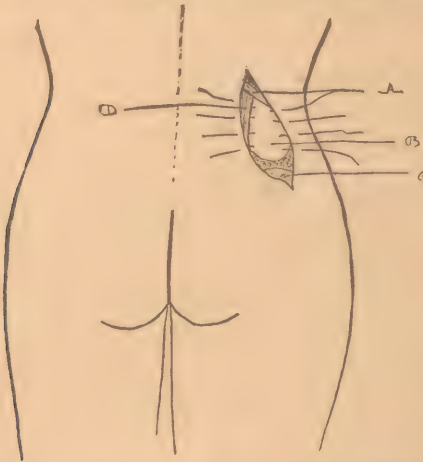
became conscious of something moving about in right side of abdomen, every movement of which was accompanied by severe pain. All sorts of apparatus and supports were tried without relief. The pain has been almost constant. Every time she turns over in bed or changes her position at all, she can feel this thing move, and its movement causes intense pain. She says that she is entirely incapacitated for work, and that her suffering is so great that she will gladly undergo anything that offers prospect of relief. Besides the pain, she complains of some numbness and loss of power in right arm and leg. Otherwise, her health is excellent. There is no history of loss of flesh. Is the mother of several children.

Strong and robust-looking woman. No appearance of impaired health. On examination with patient on left side, there can be felt on deep pressure in right lumbar region a movable body, the size and shape of the kidney. Tumor not painful to touch, but freely movable and painful on movement. The tumor can be displaced very far to the left of the umbilicus and down into the pelvis. Urine normal.³⁰

Operation, September 22, 1887, under ether. Patient on left side. An incision about six inches long along the margin of the *quadratus lumborum* muscle. The edge of the muscle having been found, was drawn to one side and the peri-nephritic fat exposed. This was cut through and separated, exposing posterior surface of kidney. The organ moved up and down freely with inspiration and expiration, undergoing a displacement of about two inches, making it very difficult to apply the sutures. Sutures of silk were passed through the capsule of the kidney by means of round needle, without entering the kidney substance. Four of these stitches were taken and the edges of the

³⁰ Massachusetts Hospital Records.

wound drawn together, with surface of kidney approximated to their inner surface. Wound then closed tightly with superficial stitches. Iodoform gauze and salicylic cotton dressings (see cut). Rapid convalescence, with no rise of temperature. The stitches which were passed through the capsule were removed October 7th. During the convalescence there was



A, Last rib. B, Kidney. C, Crest of ilium. D, Quadratus lumborum.

some pain in the region of the kidney and in the wound. There was from the first relief of her symptoms, which has continued up to the present time (May 20, 1888). She was kept in bed till Messrs. Leach & Greene had made a special pad. With this she was allowed to get up, October 30th. She returned home, and has been perfectly well ever since.

June 1, 1887, she wrote to me: "I came home from St. Margaret's altogether discouraged. . . .

I am miserable and good for nothing in the world, and have so much to do that I have not strength to accomplish that I am anxious to risk any peril for the hope of getting well."

February 29, 1888, she wrote: "I am splendidly well."

In this case, mechanical treatment was tried patiently and thoroughly till the fact was clearly demonstrated that there was nothing to be gained by it. The operation of fixation has been far more successful than I dared hope. I believe that the kidney has been permanently fastened in place by cicatricial-tissue adhesions, and that by this time it has been firmly and permanently fixed in its new position.

The kidney was not fastened into its normal position, for it was impossible to fix it high enough, but it is about two inches lower down. I believe, with Landau, that it is extremely difficult, if not impossible, to bring the kidney, especially the right, into its normal position, but I do not see that it is any disadvantage to have it brought conveniently low down.

It seems to me that the opinions expressed by the authorities already quoted present most fairly the present aspect of the best treatment in these cases; namely, that in many cases, if not in most, no interference is demanded or justified, beyond the application of a pad. In some cases, even this is not necessary, as there are no symptoms. If the symptoms are unendurable, then nephrorraphy can be done with little danger to life, and with, as it seems to me, a very good chance of permanent recovery, or, at least, enough lasting benefit to justify the operation. Finally, if fixation has not followed, we can, as a last remedy for unbearable pain and distress, resort to removal of the offending viscus.

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